

RESPONSE TO OFFICE ACTION

A. Status of the Claims

The Action stated that Applicant's election without traverse of Group III was acknowledged. Claims 1-13 have been withdrawn from further consideration.

Claims 14, 17 and 19 are currently amended, claim 15 has been cancelled, and claims 24-27 has been added. Support for the amendments is found in the claims as filed and in the specification. No new matter has been added. The new claims include method claims. However, these claims incorporate the limitations of a product claim within the scope of elected subject matter and therefore should be examined together with the claims under examination pursuant to MPEP § 809.03 and § 814.

Claims 14 and 16-27 are therefore now pending and are presented for reconsideration.

B. Specification Objections

The Action objects to the specification for its omission of the current status of the parent applications, namely their issuance as US patents. Applicant notes that the specification has been amended to state the US patent numbers after the filing dates of each parent application.

Applicant believes these amendments address all of the objections to the specification presented in the Action. Removal of the objections is thus respectfully requested.

C. Claims Objections

The Action objects to Claim 14 and dependents because the claims either recite or depend from claims that recite non-elected subject matter. Applicant notes in response that claim 14 and dependents have been amended and do not depend upon non-elected subject matter.

The Action also objects to claims 17 and 19 for being directed to non-statutory subject matter. In response, Applicant has amended claims 17 and 19 to specify that they refer to transgenic seeds.

In view of the foregoing, it is believed that the objections are moot. Withdrawal of the objection is respectfully requested.

D. Rejection under 35 U.S.C. § 102

1. Perry does not disclose a negative selectable marker gene flanked by directly repeating DNA sequences

The Action first rejects claims 14-23 under 35 U.S.C. § 102(e) as being anticipated by Perry (U.S. 6,657,109). In particular, it is stated that Perry teaches transgenic maize plants, seed and progeny with a desired agronomic trait that do not comprise ancillary DNA sequences.

In response, Applicant initially notes that current claim 14 recites a “transgenic plant comprising a transgene insertion comprising a negative selectable marker gene flanked by directly repeating DNA sequences.” Perry does not teach a negative selectable sequence flanked by directly repeating DNA sequences. Perry refers to a transgene comprising a nucleotide sequence encoding the gene of interest and a promoter, and may comprise other regulatory elements such as translation enhancers or termination signals (col. 12, lines 32-43). It is suggested that these genes may be associated with one or more markers for marker assisted selection (claim 39). However, a gene of interest associated with a marker gene is in no way equivalent to a negative selectable marker gene flanked by directly repeating DNA sequences. Therefore, Perry does not teach or suggest all elements of the claim.

In view of the foregoing, the rejection is moot. Withdrawal of the rejection is respectfully requested.

2. Ebinuma *et al.* do not teach a negative selectable marker gene

The Action next rejects claims 14-15 under 35 U.S.C. § 102(e) as being anticipated by Ebinuma *et al.* (U.S. 5,965,791). Specifically, it is asserted that Ebinuma teach dicotyledonous plants that contain a gene of interest but lack ancillary sequences because of directly repeated trasposon or recombination recognition sequences.

Applicant notes that Ebinuma does not teach a transgenic plant with a transgene insertion comprising “a negative selectable marker gene flanked by directly repeating DNA sequences” as recited by current claim 14 (emphasis added). A negative selectable marker is a gene that encodes “traits that can be selected against” (p. 54, lines 11-20). As a negative selectable marker is employed, cells expressing the negative selectable marker gene are killed when exposed to a negative selection agent (p. 97, lines 20-22). In contrast, Ebinuma refers to use of “a vector which comprises a desired gene, at least one [morphological abnormality induction] gene as a marker gene, and a removable DNA element” (col. 4, lines 45-50). This morphological abnormality induction gene allows selection of transgenic plant tissue expressing the marker gene through survival of the cells when applied to a selection agent, and is not a negative selecabable marker. Therefore, Ebinuma *et al.* do not teach all elements of the claim.

As Ebinuma do not teach all elements of the claim, the rejection is moot. Withdrawal of the rejection is respectfully requested.

3. Dale *et al.* do not disclose a negative selectable marker gene

The Action next rejects claims 14-19 under 35 U.S.C. § 102(b) as being anticipated by Dale *et al.* (*Proc. Nat’l. Acad. Sci. USA* 88(23): 10558-10562). In particular, it states that Dale

teach plants and progeny that contain the gene of interest yet lack ancillary DNA sequences due to the presence of directly repeated recombinase recognition sequences.

As noted above, claim 14 recites a “transgenic plant comprising a transgene insertion comprising a negative selectable marker gene flanked by directly repeating DNA sequences.” Dale *et al.* relate to a selectable marker gene removed from the plant genome by enzyme mediated site-specific recombination (p. 10558, abstract). This process involves the use of a selectable marker gene flanked by two recombination sites for selection during transformation (p. 10558). As with Ebinuma, the selectable marker gene taught is not a negative selectable marker (p. 10559, first col.).

Dale therefore does not teach or suggest all elements of the claim, it does not anticipate the claimed invention. Withdrawal of the rejection is respectfully requested.

E. Rejections under 35 U.S.C. § 103(a)

1. Rejection under Ebinuma *et al.*

The Action next rejects claims 14-19 under 35 U.S.C. § 103(a) as obvious in view of Ebinuma *et al.* (U.S. 5,965,791). Specifically, the Action notes that it would have been obvious to one of ordinary skill in the art to to breed and propagate the plants taught by Ebinuma for the production of seeds and progeny.

Applicant notes in response that, as shown above, Ebinuma do not teach a transgenic plant with a transgene insertion comprising a negative selectable marker gene flanked by directly repeating DNA sequences. As there was no suggestion in the art to create such plants, it could not have been obvious for one of ordinary skill in the art to breed the plants taught in Ebinuma to

produce seeds and progeny containing a negative selectable marker gene as claimed in the current invention. Therefore, withdrawal of the rejection is respectfully requested.

2. Rejection under Ebinuma *et al.* in view of Gordon-Kamm *et al.*

The Action finally rejects claims 14-23 under 35 U.S.C. § 103(a) as unpatentable over Ebinuma *et al.* (U.S. 5,965,791), in view of Gordon-Kamm *et al.* (The Plant Cell 2: 603-618, July 1990). In particular, the Action asserts that it would have been obvious to one of ordinary skill in the art to use the methods as taught in Ebinuma relating to dicotyledonous plants to transform maize and other monocots as taught in Gordon-Kamm.

As noted above, Ebinuma do not teach or suggest a transgenic plant with a transgene insertion comprising a negative selectable marker gene flanked by directly repeating DNA sequences. With no such teaching, it would not have been obvious to one of ordinary skill in the art to modify the methods disclosed in Ebinuma by applying them to the transformation of monocots as taught in Gordon-Kamm to arrive at the claimed invention.

With no teaching or suggestion to create a plant as claimed, the cited references cannot make the current claimed invention obvious. Withdrawal of the rejection is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants respectfully request favorable consideration of this case. The Examiner is invited to contact the undersigned attorney at (512) 536-3085 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

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